

## Palatoglossus muscle involvement in oropharynx Carcinoma: A pitfall in the T4 category definition of the 8th edition of the TNM staging system?

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### Keywords

TNM staging system  
Oropharyngeal cancer  
Human papillomavirus  
P16  
Palatoglossus muscle  
Surgery

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Dear Editor,

As you know, the TNM classification for head and neck cancer is renowned for its complexity and frequent updates, influenced by the intricate anatomy and numerous structures that can hinder tumour invasion or provide avenues for tumour escape.

The two cancer staging manuals, namely the AJCC (American Joint Committee on Cancer) [1] and the UICC (Union for International Cancer Control) [2], express slightly differently when defining the moderately advanced disease in oropharyngeal carcinomas (T4a for p16-negative tumors, T4 for p16-positive tumors). Both define the infiltration of the extrinsic musculature of the tongue as a criterion to classify the disease as moderately advanced. However, while the AJCC manual provides a comment specifying that this infiltration must occur at the level of the oral floor, the UICC manual lists the muscles whose infiltration determines the T4a/T4 category, including the genioglossus, hyoglossus, styloglossus, and palatoglossus muscles.

However, it should be noted that the palatoglossus muscle, despite its minimal connection to the deeper muscles of the tongue, is a superficial muscle that primarily inserts into the body of the tongue which for the most part of its course lies just a few millimetres away from the mucosa in the anterior tonsillar pillar [3].

Incorporating the palatoglossus muscle into the list of structures associated with moderately advanced disease when invaded by the tumour may lead to overestimating the aggressiveness of the tumour. This scenario can occur in cases where small tumours originating from the soft palate and tonsil invade the anterior tonsillar pillar by just a few millimetres due to contiguity. There is, indeed, no data indicating that the involvement of the palatoglossus muscle aggravates the prognosis of oropharyngeal carcinoma. Conversely, it was observed that the involvement of the anterior tonsillar pillar in oropharyngeal cancer did not exhibit any association with local recurrence, unlike the involvement of the posterior pillar [4].

Therefore, we believe that considering the palatoglossus muscle's involvement on par with bone structures such as the medial pterygoid, hard palate, or mandible, as well as other deeper tongue muscles, would be inappropriate. Also, from a surgical perspective, the resection of the

anterior tonsillar pillar presents an entirely different level of complexity compared to procedures like mandibulectomy or pterygoid plate resection. Notably, during an enlarged tonsillectomy for the removal of an early-stage tumour, the anterior pillar is typically included in the resection without prolonging the procedure or introducing additional complications [5].

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### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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